



K O N I N K L I J K E N E D E R L A N D S E
A K A D E M I E V A N W E T E N S C H A P P E N

Academy Colloquium

Stochastic Single-Cell Dynamics in Immunology – Experimental and Theoretical Approaches

Date: Amsterdam, 17-19 June 2015

Venue: KNAW, The Trippenhuis, Kloveniersburgwal 29, 1011 JV Amsterdam ([route description](#))

Programme

Wednesday 17 June 2015 (*Tinbergenroom*)

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|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 a.m. – 9:00 a.m. | Registration and coffee |
| 9:00 a.m. – 9:15 a.m. | Welcoming and Introduction |
| 9:15 a.m. – 1:00 p.m. | Session 1 : Tracing Single Cell Fates <i>in vivo</i> |
| 9:15 a.m. – 10:00 a.m. | <i>Dirk Busch</i> (Technische Universität München, DE)
Disparate individual fates along a progressive differentiation pathway compose robust and long-term maintained CD8+ T cell immunity |
| 10:00 a.m. – 10:45 a.m. | <i>Ton Schumacher</i> ((NKI, NL)
Function and kinship of tissue-resident memory T cells |
| 10:45 a.m. – 11:30 a.m. | <i>Ehud Shapiro</i> (Weizmann Institute, IL)
Single-cell genomics technologies will revolutionize whole-organism science |
| 11:30 a.m. – 1:00 p.m. | Informal discussion in front of posters |
| 1:00 p.m. – 2:00 p.m. | Lunch |
| 2:00 p.m. – 6:00 p.m. | Session 2 : Multidimensional Analysis of Single Cell Properties |
| 2:00 p.m. – 2:45 p.m. | <i>Ido Amit</i> (Weizmann Institute, IL)
Shaping the blood: Lessons from Chromatin and single cell RNA-seq dynamics |
| 2:45 p.m. – 3:30 p.m. | <i>Nienke Vrisekoop</i> (Utrecht University, NL)
Capturing heterogeneous cell populations in space and time |
| 3:30 p.m. – 4:15 p.m. | <i>Gregoire Altan-Bonnet</i> (Memorial Sloan-Kettering Cancer Center, USA)
Single-cell analysis of the dysregulation of antigen signaling in Chronic Lymphocytic Leukemia (CLL) |
| 4:30 p.m. – 6:00 p.m. | Informal discussion in front of posters |
| 6:00 p.m. – 8:00 p.m. | Cocktail |



Thursday , 18 June 2015 (*Tinbergenroom*)

- 9:00 a.m. - 1:00 p.m. **Session 3 : Imaging Lymphocyte Migration**
- 9:00 a.m. - 9 45 a.m. *Philippe Bousso* (Institut Pasteur, F)
Facing the complexity of immune responses using intravital imaging and computational modeling
- 9:45 a.m. - 10:15 a.m. *Victoria Sanz-Moreno* (King's College London, UK)
Using multidisciplinary approaches to understand the role of cytoskeletal dynamics in cancer
- 10:15 a.m. - 11:00 a.m. *Joost Beltman* (LACDR, NL)
Modeling searching and killing of target cells by T cells
- 11:15 a.m. - 1:00 p.m. Informal discussion in front of posters
- 1:00 p.m. - 2:00 p.m. **Lunch**
- 2:00 p.m. - 6:00 p.m. **Session 4 : Live Imaging of Single Cell Fates**
- 2:00 p.m. - 2:45 p.m. *Phil Hodgkin* (Walter & Eliza Hall Institute for Medical Research, AUS)
The cellular mechanics of the immune response
- 2:45 p.m. - 3:30 p.m. *Timm Schroeder* (Helmholtz Center München, DE)
Long-term single cell quantification: New tools for old questions
- 3:30 p.m. - 4:15 p.m. *Ken Duffy* (National University of Ireland, IE)
Inferring the average generation of a population of cells
- Colloquium Dinner

Friday 19 June 2015 (*Old Meeting Room*)

- Tutorials for single-cell data analysis**
- 9:00 a.m. - 10:30 a.m. *Susan Stepney* (University of York, UK)
Advanced Statistics for High-Throughput Data
- 10:30 a.m. - 11:00 a.m. Coffee/ tea break
- 11:00 a.m. - 12:30 a.m. *Joris Mooij* (University of Amsterdam)
Reconstructing Signaling Networks using Structural Causal Models
- 12:30 a.m. - 1:30 p.m. **Lunch**
- 1:30 p.m. - 3:00 p.m. *Grant Lythe* (University of Leeds, UK)
Stochastic modelling, mathematical and computational
- 3:00 p.m. - 3:30 p.m. Coffee/ tea break
- 3:30 p.m. - 5:00 p.m. *Thomas Jansen* (Aberystwyth University, UK)
Analysis of Discrete Stochastic Processes
- 5:00 p.m. - 5:30 p.m. **Conclusion and goodbye**

